

REMARKS

Claims 1-21 and 34-37 having been previously cancelled and Claims 38-40 having been withdrawn, Claims 22 through 33 are now presented for examination. Claims 22 and 25-33 have been amended to define still more clearly what Applicant regards as his invention, in terms which distinguish over the art of record. Claims 22 and 28 are the only independent claims.

Claims 28 and 29 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement in that the element "importing unit" recited in Claim 28 is not mentioned or described in the specification as originally filed. Claims 30-33 are also rejected as depending from Claim 28. This rejection is respectfully traversed.

As currently amended, Claim 28 recites that a handling unit imports the substrate into the electromagnetic-shielded chamber from a pod attached to an outside surface of the electromagnetic-shielded chamber. This feature of Claim is supported at least by lines 13 through 16 of page 8 of the specification which discloses with respect to Fig. 1 that the handling robot 1 picks up one of the wafers 31 held by the cassette 30 (pod) and transfers it onto a wafer chuck 12 of an exposure station (in exposure apparatus 110). Accordingly, it is believed that Claim 28 as currently amended fully meets the requirements of 35 U.S.C. § 112, first paragraph.

Claim 22 has been rejected under 35 U.S.C. § 112, second paragraph, in that (1) the phrase "said pod being pressed against an electromagnetic-shielded chamber" is not clear as to what Applicants' intend to include or exclude, (2) the phrase "walls which form the opening" is not clear, (3) the phrase "an electromagnetic shield member which is provided by said walls" is not clear, and (4) the phrase "at least a portion of said electromagnetic shield member being provided on said walls so as to contact the electromagnetic-shielded chamber so that said

electromagnetic shield member is grounded through the electromagnetic-shielded chamber" is not understood as to what Applicants' intend to include or exclude. Claims 23-27 have been rejected as depending from Claim 22.

Currently amended Claim 22 recites that (1) a pod is attachable to an outside surface of an electromagnetic-shielded chamber that imports a substrate from the pod rather than the objected-to "pressing of the pod against the electromagnetic-shield chamber, (2) a lid for an opening defined by walls with the substrate being imported through the opening rather than the objected-to walls which form an opening, and (3) that the walls comprise an electromagnetic-shield member a portion of which is arranged on a part of the walls which contacts the electromagnetic-shielded chamber rather than the objected-to grounding of a portion of the electromagnetic shield member through the electromagnetic-shielded chamber. As a result, it is believed that Claims 22 through 27 as currently amended fully meet the requirements of 35 U.S.C. § 112, second paragraph.

Claim 28 has been rejected under 35 U.S.C. § 112, second paragraph, in that the claim does not have all the elements of the apparatus recited in logical sequence to constitute the apparatus. The elements recited in Claim 28 as currently amended clearly correspond to the structure shown in Figs. 1 and 7 which provide an electromagnetic chamber, a handling robot 1 that imports a substrate 31 into the electromagnetic chamber from a pod 20 attached to an outside surface 21 of the electromagnetic chamber and a processing unit 15 that performs a process using the imported substrate. Accordingly, it is believed that Claim 28 as currently amended clearly recites the manufacturing device apparatus of the invention in a proper sequence and fully meets the requirements of 35 U.S.C. § 112, second paragraph.

Claims 22-33 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Applicants' Admitted Prior Art (AAPA) in view of U.S. Patent 5,006,760 (Drake et al.). Claim 27 has been rejected under 35 U.S.C. § 103(a) as unpatentable over the AAPR in view of Drake et al. and further in view of U.S Patent 4,856,904 (Akagawa). With regard to the claims as currently amended, these rejections are respectfully traversed.

Independent Claim 22 as currently amended is directed to a pod that is attachable to an outside surface of an electromagnetic-shielded chamber which covers a device manufacturing apparatus. The device manufacturing apparatus imports a substrate from a pod. The pod has walls and a lid for an opening defined by the walls. The substrate in the pod is imported into the device manufacturing apparatus through the opening. The walls have an electromagnetic shield member. A portion of the electromagnetic shield member is arranged on a part of the walls which contacts the electromagnetic-shielded chamber.

Applicant's admitted prior art (AAPA) disclosure has been cited as disclosing a cassette holding plural wafers and a pod providing an inner space to store the cassette.

In Applicant's view, Drake discloses a capacitive feed for the lower electrode in a parallel plate plasma reactor. One plate of the capacitor comprises the lower electrode or a contact to the lower electrode. The other plate of the capacitor comprises an annular member insulated from the lower electrode, or the contact. There are no RF connections directly to the lower electrode. An electromagnetic shield is attached to outside the plate having the lower electrode through resilient members and contacts a grounding ring on the other plate.

According to the invention of Claim 22 as currently amended, a pod attachable to an outside surface of an electromagnetic-shielded chamber has walls which comprise an

electromagnetic shield member. A portion of the electromagnetic shield member is arranged on a part of the walls which contacts the electromagnetic shielded chamber. Advantageously, an electromagnetic shield is provided in a state in which the pod is attached to the device manufacturing apparatus while a substrate is transferred from the pod to the electromagnetic-shielded chamber.

The AAPA discloses with respect to Fig. 10 a device manufacturing apparatus in which an airtight pod installed in an exposure apparatus with a lid that opens into the exposure apparatus so that the inside space of the pod is connected to the inside atmosphere of the exposure apparatus. The AAPA, however, is devoid of any suggestion of the feature of the walls of a pod, attachable to an electromagnetic-shielded chamber, comprising an electromagnetic shield member with a portion of the electromagnetic shield member being arranged on a part of the pod walls which contacts the electromagnetic-shielded chamber as in Claim 22.

Drake teaches a plasma reactor that has an upper electrode 11 and a lower electrode 13 separated by a dielectric ring 12. The upper electrode is grounded and the lower electrode serves as a stage for holding a wafer 14. The upper electrode is connected to a ground and the lower electrode is connected to a conductive ring 26 which is insulated from the upper electrode and separately connected to a ground. Conductive ring 17 is connected to an RF power source (not to ground 26) and is insulated from upper electrode 11 and lower electrode 13 so that conductive ring 17 and lower electrode 13 form a capacitor 35. As a result, Drake's plasma reactor may provide a device manufacturing apparatus that has an electromagnetic-shielded structure. There is, however, no suggestion in Drake of any pod and the use of the structure of the lower electrode 13 to form a capacitor with the conductive ring 17 is directed away from any

suggestion of an attachable pod from which a substrate is imported for processing within the plasma reactor. Further, Drake fails to teach or suggest the feature that a portion of the electromagnetic shield (in the walls of the pod attachable to an electromagnetic-shielded chamber) is arranged on a part of the walls which contacts the electromagnetic-shielded chamber. Accordingly, it is not seen that Drake in any manner suggests the features of Claim 22.

With regard to the cited combination, the AAPA only teaches the use of an airtight pod installed in an exposure apparatus with a lid that opens into the exposure apparatus so that the inside space of the pod is connected to the inside atmosphere of the exposure apparatus and Drake only teaches an electromagnetic-shielded chamber in which a movable lower electrode is a functioning part of a capacitor to which RF energy is applied where one ground is provided for an upper electrode and a separate grounded ring 26 is provided for a movable lower electrode 13 but there is no contact between the upper and lower electrodes. Such an arrangement is directed away from and fails to suggest an attachable pod from which a substrate is imported so that an electromagnetic shield is maintained while a substrate is imported from an attached pod as in Claim 22. Neither the AAPA nor Drake in any manner teaches the feature of Claim 22 of walls (of a pod attachable to an electromagnetic-shielded chamber) comprising an electromagnetic shield member and a portion of the electromagnetic shield member is arranged on a part of the walls which contacts the electromagnetic-shielded chamber. Accordingly, it is not seen that the addition of the AAPA air tight pod devoid of any suggested electromagnetic shield member to Drake's plasma reactor with capacitive feed wherein the attaching feature provides a capacitor structure for plasma reaction and there is no contact between a movable lower electrode having a wafer and an upper electrode could possibly suggest the feature of walls of a pod attachable to

the outside of an electromagnetic-shielded chamber comprising an electromagnetic shield member, and a portion of the electromagnetic shield member is arranged on a part of the walls which contacts the electromagnetic shielded chamber. It is therefore believed that Claim 22 as currently amended is completely distinguished from any combination of the AAPA and Drake and is allowable.

Independent Claim 28 as currently amended is directed to device manufacturing apparatus that uses a substrate. The apparatus has an electromagnetic-shielded chamber and a handling unit that imports the substrate into the electromagnetic-shielded chamber from a pod attached to an outside surface of the electromagnetic-shielded chamber. A processing unit performs a process using the imported substrate. The electromagnetic-shielded chamber has a grounded portion for contacting the pod.

It is a feature of Claim 28 as currently amended that an electromagnetic-shielded chamber having a handling unit which imports a substrate into the chamber from a pod attached to the outside surface of the chamber and a processing unit which performs processing on the substrate has a grounded portion for contacting the pod. Advantageously, an electromagnetic shield is maintained while the substrate is imported into the electromagnetic-shielded chamber from an attached pod.

As discussed with respect to Claim 22, the AAPA is restricted to teaching an airtight pod installed in an exposure apparatus with a lid that opens into the exposure apparatus so that the inside space of the pod is connected to the inside atmosphere of the exposure apparatus but is devoid of any suggestion an electromagnetic-shielded chamber that has a grounded portion for contacting the pod as in Claim 28. Drake is limited to teaching an electromagnetic-shielded

chamber arrangement in which the electromagnetic shield 27 on a movable lower electrode 13 used as part of an RF powered capacitive plasma reactor contacts a grounded conductive ring 26 which is insulated from the remainder of the grounded shielded chamber. Accordingly, it is not seen that Drake in any manner suggests the feature of Claim 28 of the electromagnetic-shielded chamber having a grounded portion for contacting a pod attached to the outside surface of the electromagnetic-shielded chamber so that an electromagnetic shield is maintained while a device manufacturing apparatus imports a substrate from an attached pod. As a result, it is not seen that the addition of the AAPA pod arrangement devoid of any suggestion of an electromagnetic-shielded chamber having a grounded portion for contacting a pod to Drake's plasma reactor wherein an electromagnetic shield of a movable lower electrode used in plasma reaction is grounded by a conductive ring insulated from the electromagnetic shielded chamber portion could possibly suggest the features of Claim 28. Accordingly, it is believed that Claim 28 as currently amended is completely distinguished from any combination of the AAPA and Drake and is allowable.

A review of the other art of record has failed to reveal anything which, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is

respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

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Respectfully submitted,



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